

VARIABLE	OVERALL SURVIVAL		
	Corticosteroids	Antibiotics	PPIs
	HR (95% CI); p - value	HR (95% CI); p - value	HR (95% CI); p - value
Cohort Pembrolizumab vs Chemotherapy	0.81 (0.69–0.94); <i>p</i> =0.0094	0.84 (0.73–0.97); <i>p</i> =0.0223	0.78 (0.64–0.96); <i>p</i> =0.0165
Corticosteroids Yes vs No	1.31 (1.06–1.61); <i>p</i> =0.0111	-	-
Interaction Corticosteroids*Cohort	p=0.0020	-	-
Antibiotics Yes vs No	-	1.13 (0.87–1.48); <i>p</i> =0.3418	-
Interaction Antibiotics*Cohort	-	p=0.1107	-
PPIs Yes vs No	-	-	1.18 (0.97–1.43); <i>p</i> =0.0916
Interaction PPI*Cohort	-	-	p=0.0460
Gender Male vs Female	1.11 (0.96–1.27); <i>p</i> =0.1594	1.12 (0.97–1.29); <i>p</i> =0.1045	1.10 (0.96–1.27); <i>p</i> =0.1686
Age Elderly vs Non-elderly	1.21 (1.06–1.38); <i>p</i> =0.0049	1.21 (1.06–1.37); <i>p</i> =0.0046	1.19 (1.05–1.36); <i>p</i> =0.0068
ECOG PS ≥2 vs 0-1	2.23 (1.89–2.63); <i>p</i> <0.0001	2.32 (1.97–2.73); <i>p</i> <0.0001	2.29 (1.94–2.70); <i>p</i> <0.0001
Smoking status Current/former vs Never	1.07 (0.87–1.31); <i>p</i> =0.4973	1.07 (0.86–1.31); <i>p</i> =0.5419	1.08 (0.87–1.32); <i>p</i> =0.4581
CNS metastases Yes vs No	1.07 (0.90–1.27); <i>p</i> =0.3906	1.23 (1.05–1.45); <i>p</i> =0.0105	1.19 (1.02–1.41); <i>p</i> =0.0302
Bone metastases Yes vs No	1.36 (1.18–1.56); <i>p</i> <0.0001	1.42 (1.23–1.62); <i>p</i> <0.0001	1.40 (1.22–1.61); <i>p</i> <0.0001
Liver metastases Yes vs No	1.38 (1.17–1.64); <i>p</i> =0.0001	1.40 (1.18–1.66); <i>p</i> =0.0001	1.45 (1.22–1.72); <i>p</i> <0.0001